

26. The screen ink printed film carrier of claim 22, wherein the thermosetting resin comprises an epoxy resin, the ink pattern maintains a resolution of 1-2 mm after curing of the screen ink printed film carrier, and the screen ink printed film carrier has an overall density of about 0.05 to 0.1 lb/ft<sup>3</sup>.

27. The screen ink printed film carrier of claim 2, wherein the ink pattern comprises silver particles and a curable thermosetting resin. --

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REMARKS

Claims 1-11 and 21-27 are currently pending upon entry of the above amendment. Editorial corrections have been made at page 7 of the specification, which are clearly supported by the disclosure and its drawings as filed. Claims 12-15 have been canceled, with applicants expressly retaining the right to refile on the subject matter embodied by those claims. Claim 1 has been amended to clarify that the recited curable adhesive material of the thin film carrier layer is co-curable with the curable resin of the ink pattern (see p. 6, lines 11-16; p. 11, lines 1-6). New claims 21 and 24 are supported at page 6, lines 18-25 of the specification. New Claims 22 and 23 are supported at page 7, lines 2-4. New Claim 25 is supported at page 6, lines 7-10. New claim 26 combines the features recited in new claims 23-25. new claim 27 is supported at pages 8-9 of the specification and original claim 18. No new matter has been introduced.

As an initial administrative matter, the Office Action did not include an initialed copy of form PTO 1449 filed with Applicants' Information Disclosure Statement on March 31, 2000 in the instant application (courtesy copy with date-stamped filing

receipt postcard attached). That Information Disclosure Statement also included a cross-citation to a co-pending patent application ser. no. 09/047,960, filed March 25, 1998 in the names of Alam et al. Applicants request that the next official action attach an initialed copy of the form PTO 1449 filed with Applicants' Information Disclosure Statement on March 31, 2000 to confirm its consideration by the Patent Office.

In any event, the Patent Office is deemed to have considered all prior art made of record in the parent application(s), whether or not cited in an Information Disclosure Statement filed by Applicant in the descendent application(s). See M.P.E.P. §§ 2001.06(b), 609; and ATD Corp. v. Lydall Inc., 48 USPQ2d 1321 (Fed. Cir. 1998).

At pages 2-3, paragraphs 15-17 of the Office Action (Paper No. 3), restriction has been made between invention "I", encompassing claims 1-11 drawn to a screen ink printed film carrier, and invention "II" encompassing claims 12-15 and directed to an electrically modulated device.

The basis of the restriction requirement is understood to be that inventions I and II are related as mutually exclusive species in an intermediate-final product relationship. The Office Action takes the position that intermediate product of invention I could be used to make a final product different from that claimed in invention II, namely, the intermediate product is said to be useful to make a decorative overlay upon a laminated article. If the restriction requirement is traversed, the Office Action (p. 2) has required that " ... applicant submit evidence or identify such evidence now of record showing the species to be obvious variants or clearly admit on the record that this is the

*case. In either instance, if the examiner finds one of the inventions anticipated by the prior art, the evidence may be used in a rejection under 35 U.S.C. 103(a) of the other invention."*

Responsive to the requirement made at page 3, paragraph 18, of the Office Action, Applicants affirm their election of Group I, claims 1-11.

At page 3, paragraph 21, of the Office Action, the use of the trademark "FM-300" on page 6, line 25 of the application is "noted", with a reminder that it needs to be capitalized wherever it appears in the application and be accompanied by a generic description. Applicants submit that these requirements have been satisfied in the instant application, and the Office Action does not indicate otherwise.

At page 4, paragraph 22, of the Office Action, claims 1 and 8-11 are rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Pat. No. 5,364,705 to Callahan (Callahan '705).

Applicants point out that relied upon U.S. Patent No. 5,364,705 to Callahan is the priority application of U.S. Patent No. 5,494,180 to Callahan (filed as divisional of the '705 Patent application), which was made of record and fully considered by the Patent Office in the parent application Ser. No. 08/988,215 (now U.S. Pat. 5,890,429) hereto.

The Office Action (p. 4) characterizes Callahan '705 as teaching:

... a resistive sheet with an electrically conductive ink layer and an electrically resistive ink layer on a substrate or a part of the sheet, (see abstract). Callahan teaches that the substrate can be polyester and can be cured, (column 2, lines 9-29; lines 60-65; column 5, lines 20-36). Callahan teaches the ink pattern can be polygons which can be changed in size, (column 3, lines 49-55). Conductive ink and magnetic particles are known. Callahan teaches the essential limitations of the claimed invention. Claims lack novelty.

Instant claim 1 recites:

A screen ink printed film carrier, comprising a thin film carrier layer supporting an ink pattern containing an electrically resistive or conductive material and a curable resin, wherein said thin film carrier layer comprises a curable adhesive material in contact with said ink pattern, and the curable adhesive material being co-curable with the curable resin.

It is immediately apparent that Callahan '705 fails to teach a screen printed ink pattern as claimed as being supported by a "...thin film carrier layer [which] comprises a curable adhesive material in contact with said ink pattern" emphasis added by underlining). Nor does Callahan '705 describe Claim 1 feature that the recited curable adhesive material of the thin film carrier layer is co-curable with the curable resin of the ink pattern.

In contrast, Callahan '705 only teach supports for the silk screened patterns which are either stiff plastics that are either not curable or no longer curable, such as kapton, polyester, or polyimide, or quartz glass or S-glass substrates on the other hand (see col. 5, lines 20-26; col. 2, lines 27-29).

It also is abundantly clear from Callahan '705 that it merely tracks the conventional R-card prior art described at pages 2-3 of the instant application in which screen ink printing of the resistive/conductive ink is performed on flat, relatively stiff cured substrate carriers (viz., cured epoxy-glass laminates), but then the printed carrier must be attached to a part by using a separate film adhesive. While Callahan '705 describes other types of carriers, such as kapton, polyester or polyimide sheet materials, which might possibly afford more flexure than cured epoxy-glass, the R-cards of Callahan '705 still require use of extraneous adhesives to render the R-card laminate suitable for attachment to a part surface. For all intents and purposes, Callahan '705 basically ends where the present invention starts off. The present invention represents a significant improvement over Callahan '705.

Also separating claim 1 from Callahan '705 is the fact that Callahan '705 fails to teach or describe providing a ink pattern containing both an electrically resistive or conductive material and a curable resin in the ink pattern being supported by the carrier. Callahan '705 states that the conductive and resistive layers are cured by themselves after being printed on the substrate, and they are NOT co-cured with the substrate nor do they have that capability given the substrates described by Callahan '705 (col. 2, lines 55-65; col. 8, lines 30-32). It also naturally follows that Callahan '705 also fail to describe the claim 1 requirement that the resin in the ink pattern is co-curable with the curable adhesive material in the thin film carrier layer.

Callahan '705 simply does not teach, suggest or hint of the more facile solution embodied by the present invention in which the screen printed ink is applied to a *multi-functional* thin film carrier layer that (1) supports the printed pattern and retains its pattern resolution in usage, but also (2) it is a curable material (co-curable with resin in the ink pattern in fact) having latent tackiness available to attach the assembly to a part surface, whether two-dimensional or three-dimensional in nature. This aspect of the claimed invention was highlighted in the present application (e.g., see p. 3, lines 21-29; p. 5, line 28 to p. 6, line 5; p. 11, lines 1-11; p. 12, lines 14). As explained in the instant specification, the screen ink printed film carrier of this invention thus can be implemented with reduced process steps (viz., no extraneous bonding step needed), concomitant reduced cost, and with a thinner assembly (p. 4, lines 5-20).

Also, the fact that conductive ink and magnetic particles may be known in general does not mean that Callahan '705 teaches these features within the four corners of his own document, much less in specific combination with other features otherwise needed to duplicate the present claimed invention. To the extent any picking, choosing, selecting, ignoring, and combining of otherwise disparate prior art teachings becomes necessary to meet all the claimed limitations, an anticipation rejection cannot be maintained.

From the above, it is apparent that the differences between the present claim 1 and Callahan '705 are substantial and numerous. Callahan '705 does not teach the "essential limitations" of the claimed invention. The dependent claims 8-11

distinguish Callahan '705 for at least the same reasons as their parent claim. From the foregoing discussion, it also is apparent why the parent application hereto, serial no. 08/988,215, was deemed to be patentability over Callahan's patent no. 5,494,180, which is the divisional of Callahan '705.

In sum, Callahan '705 does not identically disclose the present claimed invention. Therefore, Callahan '705 does not anticipate the present claimed invention, and this rejection should be withdrawn.

At pages 4-5, paragraph 23, of the Office Action, claims 1 and 8-11 are rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Pat. No. 4,321,404 to Williams et al.

According to the Office Action (pp. 4-5):

Williams teaches coating compositions which can be used in providing substrates with a strongly adhering adhesive coating. Such substrates can be metal, plastics like polyester and others, (column 13, lines 38-45). Adhesive coatings can carry an image, like an ink pattern, (column 14, lines 5-8). Williams the adhesive coated substrate can be imaged with a fused xerographic design, (column 13, lines 67-68); column 14, line 1).

Applicants note that Williams et al. teach coating stiff, uncurable substrates with coating compositions of certain poly (fluorooxyalkylene)urethane acrylates or methacrylates that are radiation curable upon being exposed with radiation. The "cured compositions" can then be used as a release coating in which it is "imaged with a fused xerographic design" that, in turn, is transferred to a strip of transparent polyester pressure sensitive tape (abstract; col. 2, lines 28-32; col. 13, line 38 to col. 14, line 10).

The fused xerographic design imaged on the adhesive coating composition suggested but never exemplified by Williams is NOT *"...an ink pattern containing an electrically resistive or conductive material and a curable resin"*, as required in instant claim 1. The wording "ink pattern" nowhere appears in Williams, nor does Williams describe a material combining the particular components thereof recited in claim 1. Williams also fail to describe the separate claim 1 requirement that the resin in an ink pattern is co-curable with a curable adhesive material in the thin film carrier layer. In fact, Williams et al. describe *neither* a curable resin in an ink pattern nor a thin film carrier layer having a curable adhesive material in combination with each other. Therefore, the coated substrates of Williams et al. do not identically describe the present claimed invention.

In view of the above, Williams et al. does not identically disclose the present claimed invention. Therefore, Williams et al. does not anticipate the present claimed invention, and this rejection should be withdrawn.

At page 5, paragraph 24, of the Office Action, claims 1, 2 and 4 are rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Pat. No. 5,403,422 to Kawai et al.

The Office Action (p. 5) urges that:

Kawai teaches a base sheet, which is similar to the screen ink printed film carrier, impregnated with a thermosetting resin which base sheet can be woven or nonwoven synthetic resin fiber, which is similar to the fibrous sublayer or textile layer, (column 4, lines 44-50). Kawai teaches that a pattern layer, which is similar to the continuous surface layer of resin with ink, can be formed in a known printing manner using conventional ink, (column 3, lines 30-34). Kawai teaches the ink composition can be used for forming the pattern layer, which is similar to the continuous layer, (column 4, lines 28-30). Kawai teaches the essential



limitations of the claimed invention. Claims lack novelty.

As a general prefacing comment, the rejection statement is replete with qualifying language such as "similar" and "essential"; anticipation requires exact identity. See, e.g., M.P.E.P. § 2131, and the case authorities cited therein.

First of all, Kawai et al. fails to describe or suggest the ink pattern as claimed "... containing an electrically resistive or conductive material and a curable resin." Instead, Kawai et al. is concerned with decorative plates, not R-cards, so it is not surprising that Kawai et al. teaches "printing inks" that are not conductive or resistive pattern inks (see col. 6, lines 10 of Kawai et al.). Also, the impregnating resin in the base paper and adhesive agent on the ink layer components in Kawai et al. are cured and bonded before completing the fabrication of the decorative plates of Kawai et al. (e.g., see Example 1). The decorative plate of Kawai et al., as fabricated, does not include a thin film carrier layer comprising a curable adhesive material in contact with an ink pattern containing a curable resin (and the resistive or conductive material).

In view of the above, Kawai et al. does not identically disclose the present claimed invention. Therefore, Kawai et al. does not anticipate the present claimed invention, and this rejection should be withdrawn.

At page 6, paragraph 25, of the Office Action, claims 3 and 5-7 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Kawai et al. in view of U.S. Pat. No. 5,102,727 to Pittman et al.

The Office Action is understood to further refer to Pittman for teachings regarding the instantly claimed fibrous sublayers in the thin film carrier layer that are textile materials, as Kawai et al. teach base paper. Applicants point out that since the basic premise of Kawai et al. is the formation of decorative "plates", one of ordinary skill in the art would not have reasonably looked to the fabric arts for possible substitute backings. In any event, whatever relevance Pittman et al. may have to the features of claims 3 and 5-7, in isolation, it does not compensate for the deficiencies of the primary reference to Kawai et al., identified above.

In view of the above, the proposed combination of Kawai et al. and Pittman et al. does not defeat the patentability of the present invention, and, accordingly, this rejection should be withdrawn.

At page 7, paragraph 27, of the Office Action, claims 8-11 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Kawai et al. in view of U.S. Pat. No. 5,185,381 to Ruffoni and U.S. Pat. No. 5,714,526 to Whyzmuzis.

Ruffoni describes spraying conductive ink on open cell reticulated foam. Whyzmuzis describes a method of preparing resin/pigment compositions useful in flexographic and gravure printing inks in which certain ferrite and ferric oxides are

disclosed as pigments, among other things. Neither Ruffoni nor Whyzmuzis concern features of R-card constructions in which both the carrier layer and printing ink contain curable resins which are co-curable in the product structure. In any event, whatever relevance these secondary references may have to the features of claims 8-11, in isolation, neither compensate for the deficiencies of the primary reference to Kawai et al., identified above.

In view of the above, the proposed combination of Kawai et al., Ruffoni, and Whyzmuzis does not defeat the patentability of the present invention, and, accordingly, this rejection should be withdrawn.

Should no other rejections or objections remain outstanding, Applicants submit that this present application is in condition for allowance upon entry of the above amendment, and earnestly request notification of same.

If the Examiner believes that a teleconference would be useful in advancing the prosecution of this application, the official is hereby invited to telephone undersigned counsel to arrange for such a conference.

Respectfully submitted,  
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Date: August 16, 2000